

Amendments to the Claim:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 (withdrawn; currently amended). Species specific method for identifying infection of a mammal with Chlamydia pneumoniae, said method comprising detecting in a patient or in a patient sample the presence of antibodies against (i) one or more proteins from the outer membrane of Chlamydia pneumoniae, said proteins being outer membrane proteins selected from proteins having the sequence as shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or in SEQ ID NO:24, or (ii) a variant which has at least 50% sequence similarity with any of said proteins, or (iii) a subsequence of at least 6 consecutive amino acids of any of said proteins.

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2 (withdrawn).—Method according to claim 1 wherein detection of nucleic acid fragments is obtained by using nucleic acid amplification.

3 (withdrawn). Method according to claim 2, wherein detection of nucleic acid fragments is obtained by using polymerase chain reaction.

4 (withdrawn; currently amended). A nucleic acid fragment derived from Chlamydia pneumoniae comprising the nucleotide sequence SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, or SEQ ID NO:23, or a variant or subsequence of said nucleotide sequence which has a sequence homology of at least 50% with any of sequences mentioned and wherein a subsequence of 100 nucleic acids or lower shows a homology of at least 80%.

5 (currently amended). A non-naturally occurring or isolated protein or peptide which is (i) an isolated protein

derived from *Chlamydia pneumoniae* having the amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, and SEQ ID NO:24, said protein being free of any other chlamydial protein, or (ii) a ~~variant protein having an amino acid sequence identity of at least 80% to at least one of said isolated proteins, or (iii) a an isolated or non-naturally occurring~~ peptide or protein which consists of an amino acid sequence which is a subsequence, at least 6 amino acids in length, of at least one of said isolated proteins, said ~~variant protein or~~ subsequence comprising at least one T cell epitope of at least one of said isolated proteins.

6 (withdrawn; currently amended). Polyclonal monospecific antibody against the protein with the sequence shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24, ~~or a variant or subsequence thereof.~~

7 (previously presented). A diagnostic kit for the diagnosis of infection of a mammal with *Chlamydia pneumoniae*, said kit comprising a peptide or protein of claim 5.

8 (withdrawn; currently amended). A diagnostic kit for the diagnosis of infection of a mammal, ~~such as a human~~, with *Chlamydia pneumoniae*, said kit comprising an antibody against (i) a protein with the amino acid sequence SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24 ~~or (ii) a variant which has at least 50% sequence similarity with any of said proteins, or (iii) a subsequence of at least 6 consecutive amino acids of any of said proteins.~~

9 (withdrawn; currently amended). A diagnostic kit for the diagnosis of infection of a mammal, ~~such as a human~~, with *Chlamydia pneumoniae*, said kit comprising a nucleic acid

fragment with the sequences SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, or SEQ ID NO:23, or a ~~variant or subsequence thereof and wherein a subsequence of 100 nucleic acids or lower shows a homology of at least 80%~~.

10 (previously presented). A composition for immunising a mammal against Chlamydia pneumoniae, said composition comprising a peptide or protein of claim 5.

11 (withdrawn; currently amended). Method of claim 1, comprising use of a protein with the sequence shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24, or a ~~variant or subsequence thereof in diagnosis of infection of a mammal with Chlamydia pneumoniae.~~

12 (cancelled).

13 (withdrawn, currently amended). A method of immunizing a mammal against Chlamydia pneumoniae which comprises use of an immunologically effective amount of a protein with the sequence shown in SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, or SEQ ID NO:24, or a ~~variant or subsequence thereof, for immunising a mammal against Chlamydia pneumoniae.~~

14 (cancelled).

15 (withdrawn, currently amended). A method of immunizing a mammal against Chlamydia pneumoniae which comprises use of an immunologically effective amount of a nucleic acid fragment with the nucleotide sequence shown in SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, or SEQ ID NO:23, or a ~~variant or subsequence of said nucleotide sequence which has a sequence homology of at least 50% and wherein a subsequence of 100~~

~~nucleic acids or lower shows a homology of at least 80% with any of the mentioned nucleotide sequences encoding a protein used for effecting *in vivo* expression of antigens against *Chlamydia pneumoniae*, to immunize a mammal, by administering said nucleic acid fragment under conditions conducive to expression of said protein and subsequent immunization of said mammal by said protein.~~

16 (withdrawn). The method of claim 13 wherein the protein is in undenatured form.

17 (withdrawn; currently amended). The method of claim 1 in which the subsequence ~~(iii)~~ (ii) comprises at least 100 consecutive amino acids of sequence of (i).

18 (withdrawn). Species specific method for identifying infection of a mammal with *Chlamydia pneumoniae*, said method comprising

- (a) obtaining a sample of a biological fluid or tissue from a mammal suspected of being infected with *Chlamydia pneumoniae*,
- (b) contacting said sample with a diagnostic reagent, said reagent comprising an isolated protein according to claim 1 in labeled or immobilized form, and
- (c) correlating the binding of said protein with a component of said sample to the presence or absence of an infection.

19-21 (cancelled).

22 (currently amended). The protein or peptide of claim 5 where said subsequence is at least 10 amino acids in length.

23 (currently amended). The protein or peptide of claim 5 where said subsequence is at least 15 amino acids in length.

24 (currently amended). The protein or peptide of claim 5 where said subsequence is at least 20 amino acids in length.

25 (currently amended). The protein or peptide of claim 5 where said subsequence is at least 30 amino acids in length.

26 (cancelled).

27 (currently amended). The protein or peptide of claim 5 which comprises at least two Gly-Gly-Ala-Ile (amino acids 164-167 of SEQ ID NO:2) motifs.

28 (currently amended). The protein or peptide of claim 5 which comprises at least three Gly-Gly-Ala-Ile (amino acids 164-167 of SEQ ID NO:2) motifs.

29 (currently amended). The protein or peptide of claim 5 which comprises at least four Gly-Gly-Ala-Ile (amino acids 164-167 of SEQ ID NO:2) motifs.

30 (currently amended). The protein or peptide of claim 5 which comprises a Phe-Tyr-Asp-Pro-Ile (amino acids 374-378 of SEQ ID NO:2) motif.

31 (currently amended). The protein or peptide of claim 5 whose amino acid sequence comprises at least two tryptophans which each correspond to a tryptophan identified as conserved in Figs. 8A-8J.

32 (currently amended). The protein or peptide of claim 5 whose amino acid sequence comprises at least four tryptophans which each correspond to a tryptophan identified as conserved in Figs. 8A-8J.

33 (currently amended). The protein or peptide of claim 5 comprises an amino acid sequence identical to the region from amino acid 400 to 490 of at least one of said isolated proteins.

34-44 (cancelled).